UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 29, 2011

Mr. Thomas Gurdziel
9 Twin Orchard Drive
Oswego, NY 13126

Dear Mr. Gurdziel:

Your letter dated April 22, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11118A093), addressed to Mr. William Borchardt, Executive Director for Operations of the Nuclear Regulatory Commission (NRC), has been referred to the Office of Nuclear Reactor Regulation pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.206 of the NRC's regulations.

Your letter requested that the licensee for Salem Nuclear Generating Station (Salem), Unit No. 1, be fined $500,000 "for failing to have an effective corrective action program that fixes problems promptly." As the basis for your request, your letter cited the licensee's continuing inability to remove sufficient vegetation (e.g., grass) from the water in the Delaware River used to supply cooling to the condenser (i.e., circulating water system) before a plant scram is necessary. Your letter referenced Event No. 46774, which was a 10 CFR 50.72 report submitted by the licensee, PSEG Nuclear LLC (PSEG), to the NRC providing notification that Salem Unit No. 1 was manually shutdown on April 21, 2011, due to a loss of circulating water pumps from heavy grassing at the circulating water intake. You also enclosed a letter you sent to the licensee on April 27, 2007, stating your view that the current circulating water system design at Salem Unit Nos. 1 and 2 "is not adequate to provide for reliable electric generation" (i.e., based on repeated problems due to river grassing). Your letter suggested several ways the licensee could improve circulating water system reliability. You also enclosed a letter you sent to NRC Region I on May 1, 2007, providing ideas on possible temporary mitigating solutions to the river grassing issue.

In a subsequent e-mail to the NRC on April 29, 2011 (ADAMS Accession No. ML111250033), you referenced an NRC Region I Problem Identification and Resolution Inspection Report dated May 3, 2007 (ADAMS Accession No. ML071230588), pertaining to Salem Unit Nos. 1 and 2, and Hope Creek Generating Station. Specifically, you noted that the inspection report discussed 5 trips of the 22 service water strainer (Salem Unit No. 2) in the 2006/2007 timeframe due to either grassing or drum shaft packing issues. The e-mail also cited Event No. 43317, which was a 10 CFR 50.72 report submitted by PSEG providing notification to the NRC that Salem Unit No. 1 was manually shutdown on April 24, 2007, due to a loss of circulating water pumps from heavy grassing at the circulating water intake.

In an email to the NRC dated May 2, 2011 (ADAMS Accession No. ML111240012), you requested to change the fine from a single amount of $500,000 to $250,000 per significant down-power due to grassing. You indicated that would bring the total fine up to $750,000 currently. The three significant down-powers inferred by the fine amount appear to be as follows:

- Manual shutdown of Salem Unit No. 1 due to grassing on April 21, 2011, while operating at 89% power;

- Down-power of Salem Unit No. 1 from 60% power to < 10% power on April 24, 2011; and

- Down-power of Salem Unit No. 1 from 96% power to < 10% power on May 1, 2011.

The above three events were due to grassing impacts on the circulating water system.

On April 28, 2011, the NRC's Petition Manager for your petition, Mr. Richard Ennis, contacted you via e-mail regarding the 10 CFR 2.206 process and offered you the opportunity to address the NRC's Petition Review Board (PRB). In an e-mail dated April 28, 2011 (ADAMS Accession No. ML111220359), you indicated that you did not want to address the PRB.

The PRB met on May 26, and June 7, 2011, and reviewed your petition in accordance with NRC Management Directive (MD) 8.11, "Review Process for 10 CFR 2.206 Petitions" (ADAMS Accession No. ML041770328). MD 8.11 specifies the criteria that are used to determine whether to accept or reject petitions for review. In a request made pursuant to 10 CFR 2.206, the petitioner must specify the facts that constitute the bases for taking the requested action. The petitioner must provide some element of support beyond the bare assertion. In addition, the supporting facts must be credible and sufficient to warrant further inquiry. After reviewing your concerns, the PRB's initial recommendation was that your petition not be accepted for review in the 10 CFR 2.206 process because you did not set forth facts sufficient to constitute a basis for the requested action. Specific information regarding the basis for the PRB's initial recommendation is included in the Enclosure to this letter.

On June 13, 2011, the Petition Manager contacted you via telephone to inform you of the PRB's initial recommendation and to offer you the opportunity to address the PRB prior to its making a final determination regarding your request. During that conversation you indicated that you did not desire to address the PRB or provide any additional information supporting your request. As such, the PRB's final determination is to not accept your petition for review under the 10 CFR 2.206 process because your petition did not meet the criteria for review as stated in NRC MD 8.11.

Thank you for your interest in these matters.

Sincerely,

Allen G. Howe

Allen G. Howe, Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-272

Enclosure: As stated

cc w/ encl: Distribution via Listserv

Basis for Petition Review Board Recommendation

Summary of Request

The petitioner requested that the NRC fine PSEG Nuclear LLC (PSEG, the licensee) "for failing to have an effective corrective action program that fixes problems promptly" at Salem Nuclear Generating Station (Salem), Unit No. 1. The petitioner's specific concern relates to repeated down-powers or shutdowns at the Salem facility due to "grassing" events. The petitioner requested that PSEG be fined $250,000 for each significant down-power as a result of grassing. The petition and related e-mails from the petitioner are contained in ADAMS package Accession No. ML111250339.

Background

Grassing and its impact on the circulating water and service water systems, at Salem Unit Nos. 1 and 2, is a well-known seasonal issue (typically February through May). The term "grassing" by the licensee is typically used to describe any type of detritus (non-living particulate organic material) from the Delaware River.

PSEG has a procedure in place to prepare the Salem site for grassing season. PSEG also has procedures in place for Salem to monitor river grassing conditions. The procedures use weather conditions data (e.g., predicted wind speed and wind direction, precipitation) and other information (e.g., tides, river flow rate) to help predict future loading or levels of debris on the circulating water screens. The procedures contain specific river grass concentration levels for entry into component bio-fouling procedures. The component bio-fouling procedures provide direction regarding reducing reactor power to "facilitate waterbox cleaning and minimize other potential challenges to the Operating Crew without the additional challenge of unanticipated rapid load reductions due to excessive detritus levels."

Grassing events at Salem have sometimes resulted in down-powers or manual shutdowns in response to degraded circulating water system conditions (e.g., circulating water pumps taken out of service due to high differential pressure on associated traveling screens). Grassing events have also impacted service water system components (e.g., trips of service water strainers, bio-fouling of heat exchangers).

As discussed in PSEG's Licensee Event Report dated June 6, 2011, related to the April 21, 2011, manual shutdown due to grassing (ADAMS Accession No. ML11172A108), the river detritus levels in April 2011 were at historic high levels. Additionally the duration of the 2011 high detritus period was longer than experienced in previous years.

Regulatory Requirements

Quality Assurance Requirements

The petitioner has raised concerns regarding the licensee's failure to have an effective corrective action program that fixes problems promptly. The concern is directly related to the

repetitive nature of the grassing issue and the resultant down-powers or shutdowns that sometimes occur. The petitioner has suggested various design modifications as the corrective actions that should be taken. From a regulatory standpoint, the petitioner's concern most closely relates to Criterion XVI, "Corrective Actions," of Appendix B to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR), which states that:

> Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.

As noted in Appendix B to 10 CFR Part 50, the pertinent requirements of this appendix apply to activities affecting the safety-related functions of structures, systems and components (SSCs). The service water system at Salem is safety-related. The circulating water system at Salem is non-safety-related. The grassing events cited by the petitioner all involved the circulating water system.

Circulating water system problems may result in a loss of the main condenser as a heat sink and require the use of safety-related SSCs to shutdown the reactor and remove residual heat. However, periodic challenges of this type do not adversely affect the safety-related functions of SSCs used to shutdown the reactor and remove residual heat. As noted in PSEG's Licensee Event Report related to the April 21, 2011, manual shutdown due to grassing (ADAMS Accession No. ML11172A108), "[t]his event did not prevent the ability of a system to fulfill its safety function to either shutdown the reactor, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident."

Maintenance Rule Requirements

The objective of 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," (referred to as the Maintenance Rule) is to require monitoring of the overall continuing effectiveness of licensee maintenance programs to ensure that: (1) safety-related and certain non-safety-related structures, systems, and components (SSCs) are capable of performing their intended functions, and (2) for non-safety-related equipment, failures will not occur that prevent the fulfillment of safety-related functions, and failures resulting in scrams and unnecessary actuations of safety-related systems are minimized.

Regulatory Guide (RG) 1.160, Revision 2, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" (ADAMS Accession No. ML003761662) endorses NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2 (ADAMS Accession No. ML101020415) as providing methods that are acceptable to the NRC staff for complying with the provisions of 10 CFR 50.65 (with certain provisions and clarifications as stated in the RG).

Paragraph (a)(1) of the Maintenance Rule requires the operator of each power reactor to set goals and to monitor the performance or condition of SSCs in a manner sufficient to give reasonable assurance that those SSCs are capable of performing their intended functions. The rule states the goals must be commensurate with safety and where practical take into account industry-wide operating experience. The rule also requires operators to take appropriate corrective action when the performance or condition of an SSC does not meet established goals.

Paragraph (a)(2) of the Maintenance Rule establishes an alternative approach to the monitoring regime required by paragraph (a)(1) of the rule. The NRC recognizes in this approach that, in certain cases, the performance or condition of SSCs could be effectively controlled by doing adequate preventive maintenance rather than by monitoring against goals.

For Salem, the circulating water system pumps are in scope of the Maintenance Rule. In the Salem program, the performance of the pumps is controlled by preventative maintenance in accordance with paragraph (a)(2) of the Maintenance Rule. As discussed in the guidance in NUMARC 93-01, when SSCs in (a)(2) do not perform acceptably, they are evaluated to determine the need for goal setting and monitoring under the requirements of paragraph (a)(1). Unacceptable performance should result in the licensee performing a cause determination and taking corrective actions to prevent recurrence.

Petition Review Board Recommendation

As noted above, the petitioner has requested that a civil penalty be imposed on the licensee (i.e., fine of $250,000 for each significant downpower as a result of grassing). In accordance with the requirements in 10 CFR 2.205, "Civil penalties," and the guidance in the NRC's Enforcement Manual (ADAMS Accession No. ML102630150), civil penalties (i.e., monetary fines) may only be imposed if a violation has occurred. The maximum civil penalty is $140,000 per violation per day. However, not all violations are subject to civil penalties. The NRC uses a graded approach, based on the type and severity of the violation, to determine if a civil penalty should be imposed as well the amount of the penalty. Figure I-1 in the NRC's Enforcement Manual depicts the graded approach to assessing civil penalties for certain types of violations.

The petitioner has raised concerns regarding the licensee's failure to have an effective corrective action program that fixes problems promptly based on the recent grassing events (spring 2011) at Salem Unit 1. The recent grassing events all involved the non-safety-related circulating water system. These grassing events did not adversely affect the functions of any safety-related SSCs. As such, the grassing events cited by the petitioner did not represent a violation of Criterion XVI of Appendix B to 10 CFR Part 50. Furthermore, the petitioner has provided no information indicating a violation of the requirements in the Maintenance Rule.

In a request made pursuant to 10 CFR 2.206, the petitioner must specify the facts that constitute the bases for taking the requested action. The petitioner must provide some element of support beyond the bare assertion. In addition, the supporting facts must be credible and sufficient to warrant further inquiry. The petitioner has not provided any facts demonstrating that a violation of the NRC's regulations has occurred related to the spring 2011 grassing events. As such, there is no basis to impose a civil penalty. Therefore, the NRC's Petition Review

Board recommends that the petitioner's request not be accepted for review as a 10 CFR 2.206 petition.

The NRC staff notes that the grassing issue and the corrective action program at Salem are continually assessed during inspections conducted as part of the NRC's Reactor Oversight Process (ROP). In addition to inspection findings, the ROP Performance Indicator (PI) Program provides data to assess plant performance. Unplanned scrams and power changes are considered in the PI Program. Further details are provided below for informational purposes.

Inspections Related to Grassing Events and Corrective Action Program

The NRC Regional staff assess the licensee's corrective action program as part of the inspections performed in accordance with Inspection Procedure (IP) 71152, "Problem Identification and Resolution," (ADAMS Accession No. ML093270053). As described in this IP, completion of the IP is accomplished during routine problem identification and resolution (PI&R) reviews, semiannual trend reviews, annual follow-up of selected issues, and biennial team inspections. One of the objectives of the IP is to determine whether licensees are complying with NRC regulations regarding corrective action programs (i.e., Criterion XVI of Appendix B to 10 CFR Part 50). The IP states that when evaluating the effectiveness of a licensee's corrective actions for a particular issue, the nature and potential significance of the identified problem must be considered. One of the performance attributes to be considered by the NRC inspector is whether the licensee's corrective actions are completed in a timely manner commensurate with the safety significance of the issue.

The grassing issue and the associated corrective actions have been the subject of a number of NRC inspections at Salem Unit Nos. 1 and 2. The following is a brief summary of some of the NRC inspection reports that discuss grassing issues between 2007 through 2011:

> Inspection Report dated May 3, 2007 (ADAMS Accession No. ML071230588)
> During this P&IR inspection, the NRC identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," because PSEG did not implement effective corrective actions to prevent repetitive trips of the 22 service water suction strainer. PSEG completed evaluations following the trips and determined the trips were caused either by drum shaft packing issues or river grass causing excessive drag on the strainer body as it rotated. The finding was determined to be of very low safety significance (Green).
>
> Inspection Report dated May 11, 2007 (ADAMS Accession No. ML071350075)
> During this routine baseline inspection, the NRC inspectors reviewed PSEG's preparation activities related to potential river grass intrusion conditions. Inspectors assessed implementation of PSEG's grassing readiness plan through plant walkdowns, corrective action program review, and discussions with cognizant managers and engineers. No findings of significance were identified. Similar type inspections were performed in spring 2008 and 2009, as documented inspection reports dated May 15, 2008, and April 29, 2009 (ADAMS Accession Nos. ML081360297 and ML091190177, respectively). No findings of significance were identified in either inspection related to this issue.

Inspection Report dated August 5, 2008 (ADAMS Accession No. ML082200302)
During this routine baseline inspection, the NRC inspectors performed a review of PSEG's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The review was focused on repetitive equipment and corrective maintenance issues. The inspectors noted that the 13A circulating water screen was unreliable during the spring 2008 river grassing season. The inspectors determined that PSEG was aware of the areas indentified through the trend review and was appropriately addressing the issues. No findings of significance were identified.

Inspection Report dated April 4, 2011 (ADAMS Accession No. ML110940193)
During this component design-basis inspection, the NRC reviewed the 21 service water pump to verify its ability to meet the design-basis requirements in response to transient and accident events. As part of this inspection, the NRC reviewed the maintenance and functional history of the pump by sampling corrective action reports and other documentation. The NRC reviewed the effectiveness of traveling screen/strainer design features and adverse condition operating procedures for limiting potential effects of ice and river grass on the pumps/system. The team also conducted several detailed walkdowns to visually inspect the physical/material condition of the pump and its support systems. No findings were identified.

Performance Indicators Related to Unplanned Scrams and Power Changes

As discussed in NRC Inspection Manual Chapter 0608, "Performance Indicator Program," (ADAMS Accession No. ML070360605), the NRC's ROP is built upon a framework directly linked to the Agency's mission. That framework includes cornerstones of safety that focus on the licensee's ability to: (1) limit the frequency of initiating events; (2) ensure the availability, reliability, and capability of mitigating systems; (3) ensure the integrity of the fuel cladding, the reactor coolant system, and containment; (4) ensure the adequacy of the emergency preparedness functions; (5) protect the public from exposure to radioactive material releases; (6) protect nuclear plant workers from exposure to radiation; and (7) provide assurance that the physical protection system can protect against the design-basis threat of radiological sabotage. Satisfactory licensee performance in the cornerstones provides reasonable assurance of safe facility operation and that the NRC's safety mission is being accomplished.

Within each cornerstone, a broad sample of data on which to assess licensee performance in risk-significant areas is gathered from PI data submitted by licensees and from the NRC's risk-informed baseline inspections. The PIs are not intended to provide complete coverage of every aspect of plant design and operation, but they are intended to be indicative of performance within the related cornerstone. Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline" (ADAMS Accession No. ML092931123), contains guidance that describes the thresholds for PIs and the criteria for reporting the PI data to the NRC. If PI thresholds are crossed, the NRC performs supplemental inspections that evaluate the licensee's cause analyses and corrective actions.

In the Initiating Events Cornerstone, the ROP has PIs related to unplanned scrams and power changes. The two down-powers and the manual scram, related to the grassing events referenced by the petitioner, occurred in the second quarter of 2011. PI data for the second

quarter will be provided to the NRC around the July 21, 2011, timeframe. The NRC expects that the licensee will review the down-powers and scram to determine if they meet the NEI 99-02 criteria for being reported to the NRC. The NRC performs PI verification inspections in accordance with IP 71151, "Performance Indicator Verification," (ADAMS Accession No. ML070720376) to determine that licensees adequately report PI data, including those related to unplanned scrams and power changes. If the above-mentioned down-powers and scram meet the criteria for being included in the PI data that the licensee submits to the NRC, and if any of the PIs cross thresholds, the NRC would perform a supplemental inspection to review the licensee's cause evaluations and corrective actions.

Thank you for your interest in these matters.

Sincerely,

/ra/

Allen G. Howe, Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-272

Enclosure: As stated

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